

# Woodstock 177/148 – NH 175 over the Pemigewasset River



## **Existing Bridge**

- Built 1939
- 183' Long Steel Tied Arch with an Open Grid Deck
- Red-Listed in 2014 – Posted 20 tons
- Currently rated Deck 4, Superstructure 4, Substructure 5

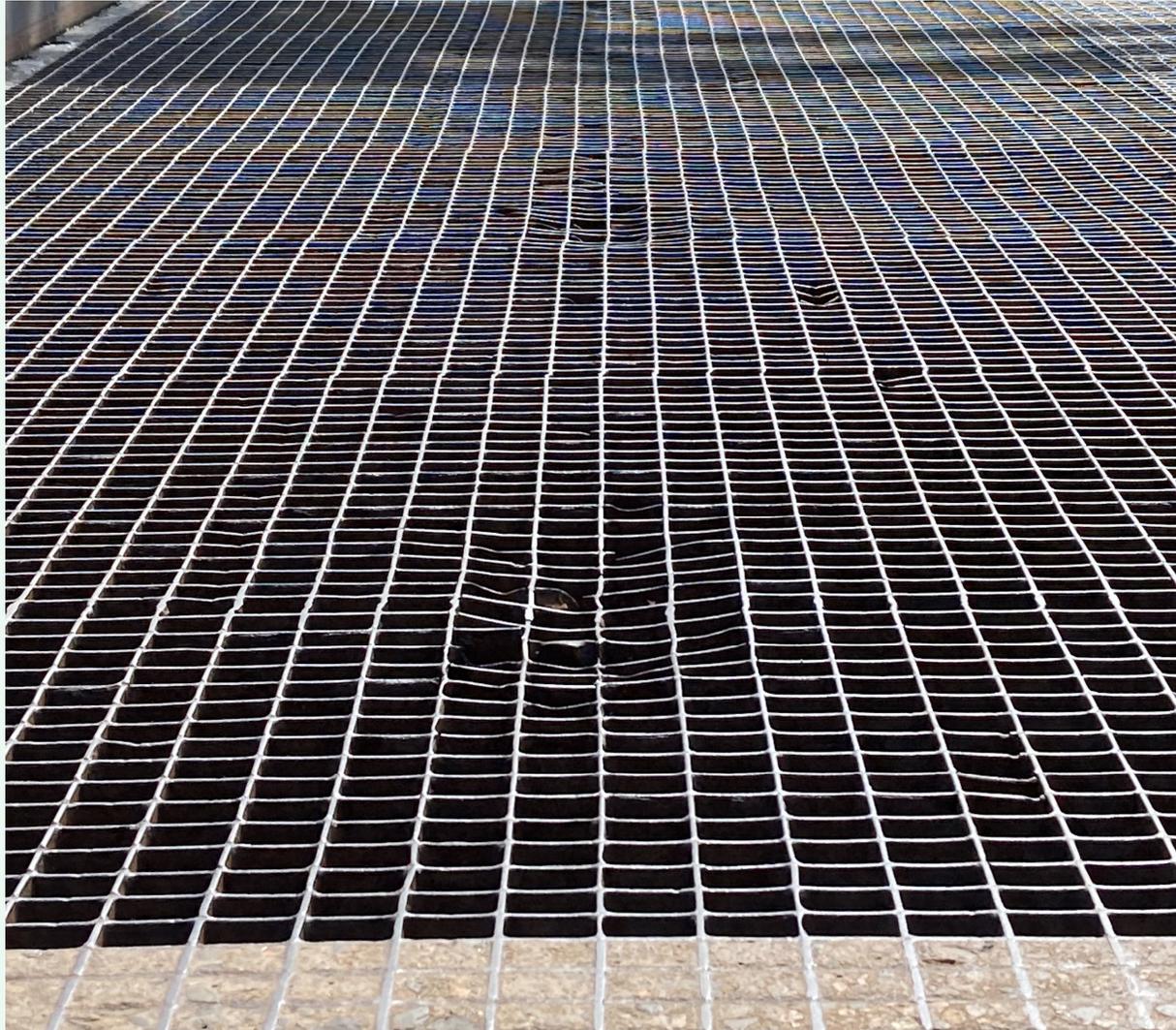
## **Bridge Maintenance Repairs**

- Grid deck replacement has been ongoing since 2010
- Over 40% of the deck has been replaced or plated
- Over \$350,000 has been spent since 2010
- Additional work is now needed

## **Capital Project**

- Rehabilitation Project 27713 – Ad date 2024











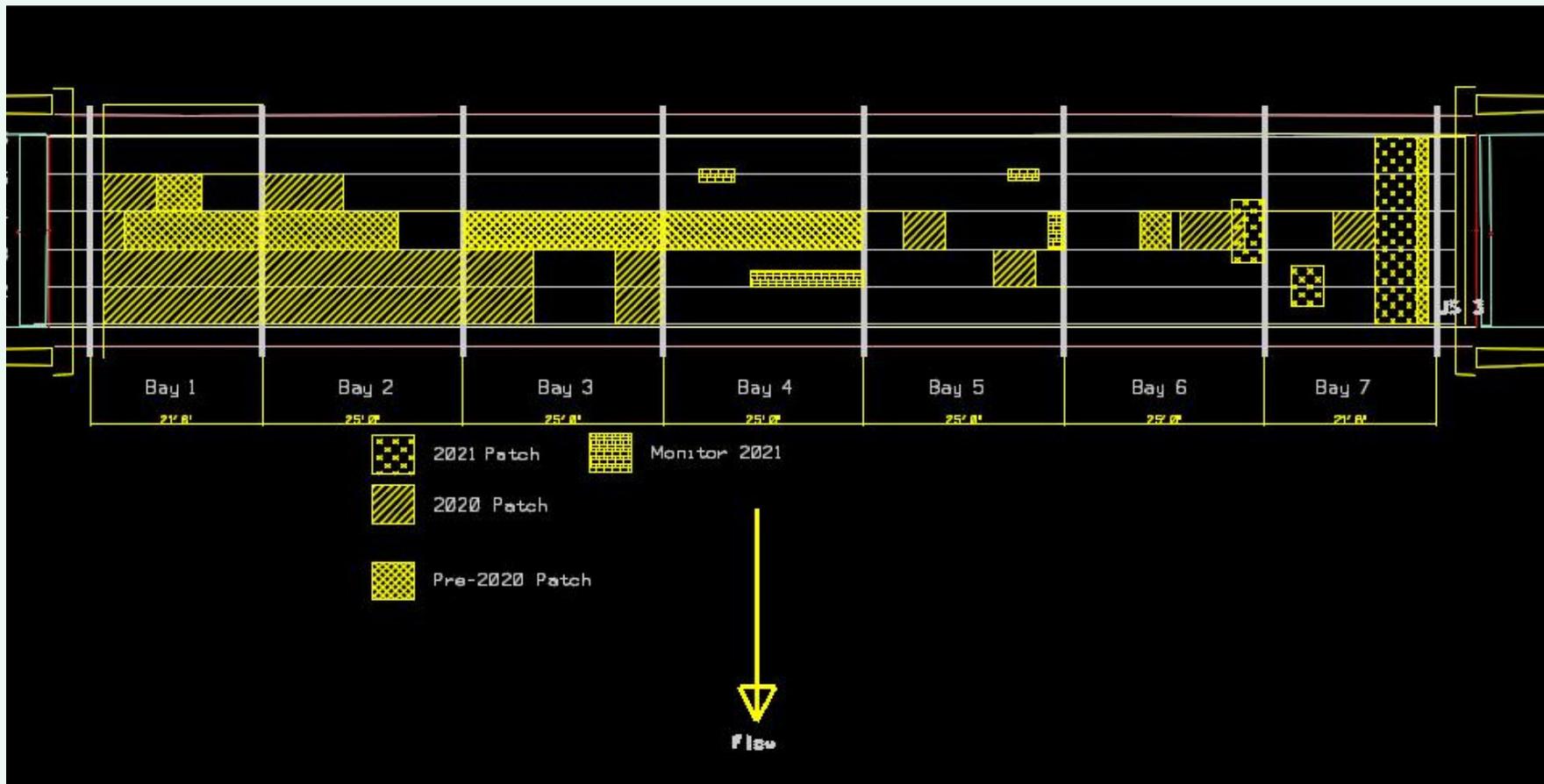












The Department has been working to keep this bridge open to most vehicles since 2010

The bridge load posting was reduced in 20 tons in 2019.

The deterioration of the open grid steel grading is accelerating, and we are now at a point where we need to restrict traffic to a single lane and down post the allowable loading further.





Woodstock 27713

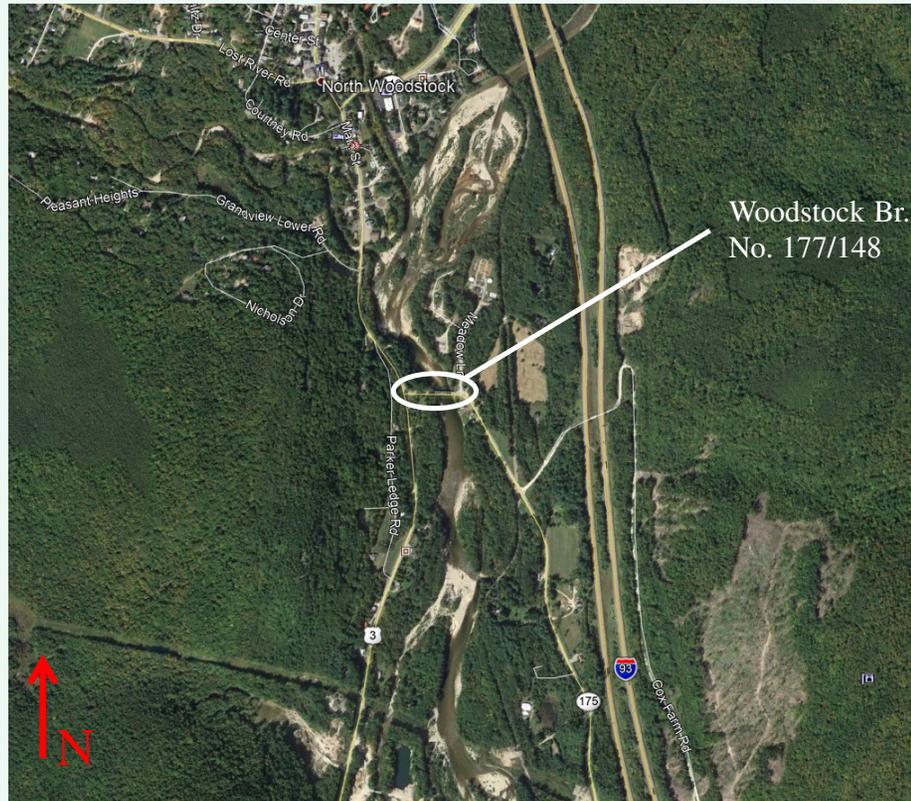
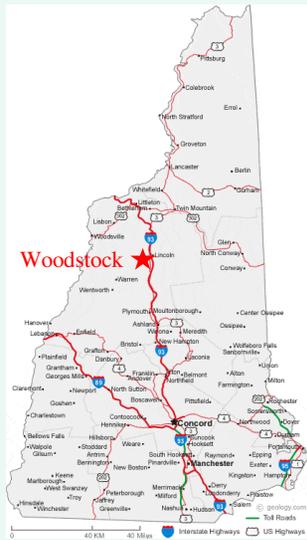
NH 175 over Pemigewasset River

Woodstock Select Board Meeting

May 31, 2022

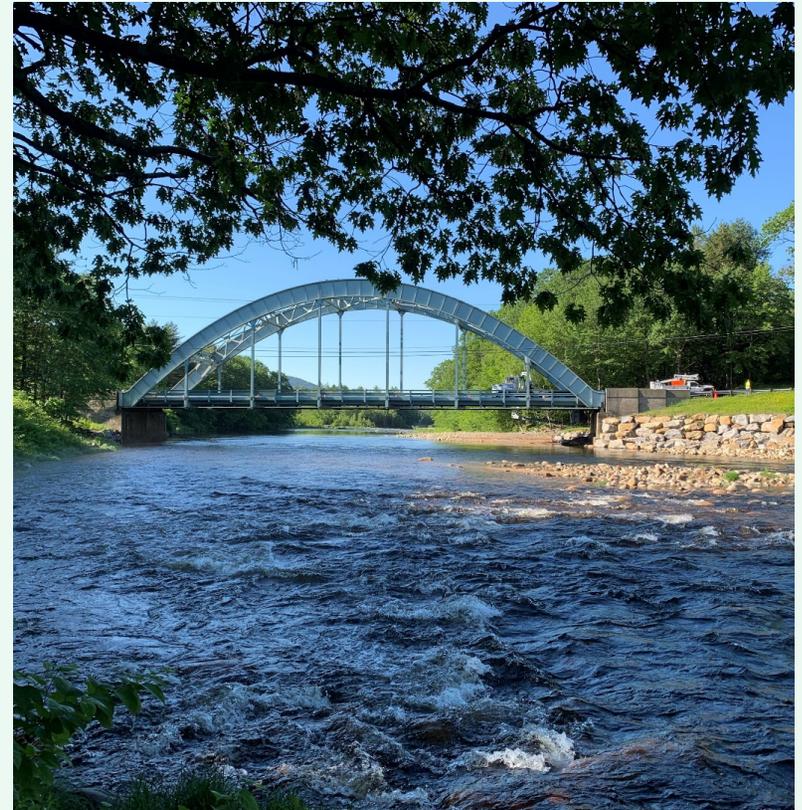


# Location Map



# Bridge Information

- 175' Single Span
- Steel Tied Through-Arch
- Built in 1939
- On State Red List (since 2014), currently ranked No. 13
- Eligible for National Register of Historic Places (11/13/2019)
- One of two remaining tied-arches in NH



# Bridge Information

- Tier 3 Roadway
- Approx. 570 vehicles per day
- Roadway Width: 24'-0" curb-to-curb
- Open grid deck has led to deterioration of structure and is hazardous for cyclists



# Purpose and Need

## Purpose

- To remove the bridge from the State Red List by providing a structurally sound crossing that allows for the highest load posting possible without impact to the arches (anticipated to be “No Posting Required”) and with minimal impact to character defining features.

## Need

- Bridge deck and superstructure are in poor condition
- Bridge is currently posted 20 tons (since Jan 2020) – to be further reduced (June 2022) due to continued deterioration of the floor system

# Project Activities To-Date

- Bridge Inspection – June 2019
- Determined Eligible for National Register of Historic Places – November 2019
- Bridge Load Rating – January 2020
- Project Presented at Natural Resources Meeting – February 2020
- Project Presented at Cultural Resources Meeting – August 2020
- Rehabilitation Study Report, Submitted – November 2021

# Bridge Components



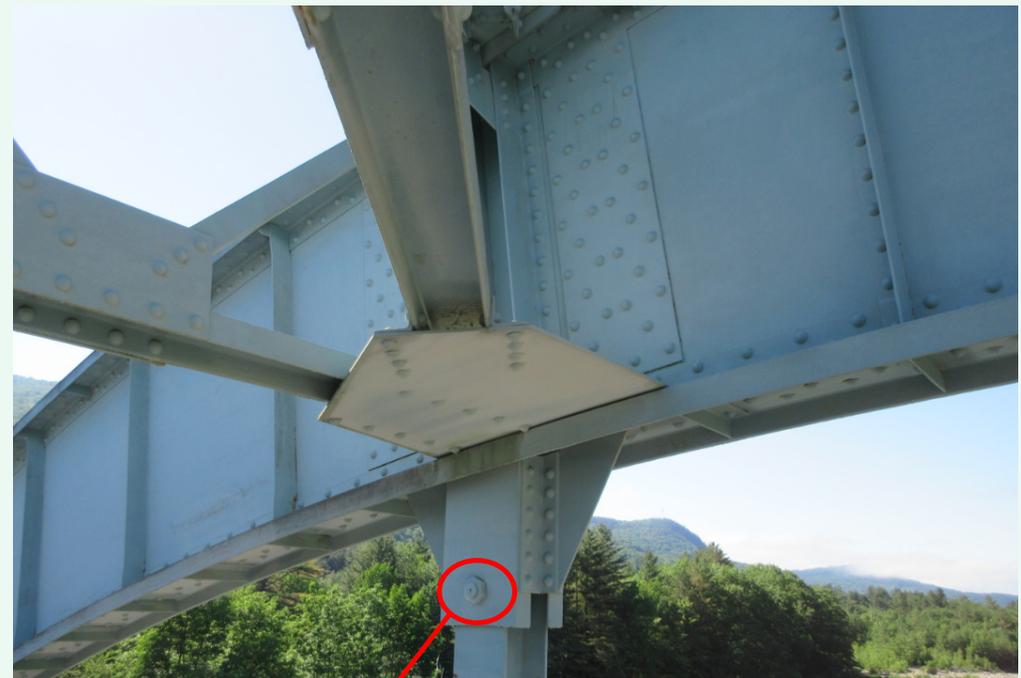
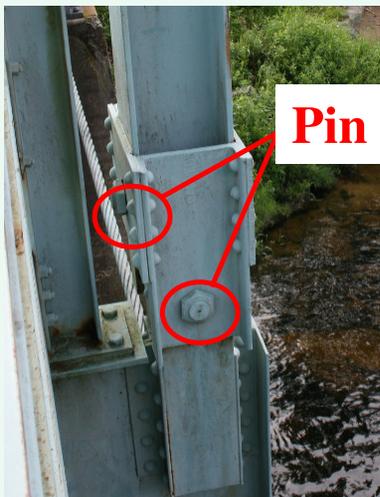
# Floorbeams, Stringers, Deck and Bridge Rail

- Load Rating – Inadequate for Legal Loads
- Condition – Heavy Corrosion and Section Loss
- Recommendation – Replacement
- Not Significant Features



# Arch and Vertical Hangers

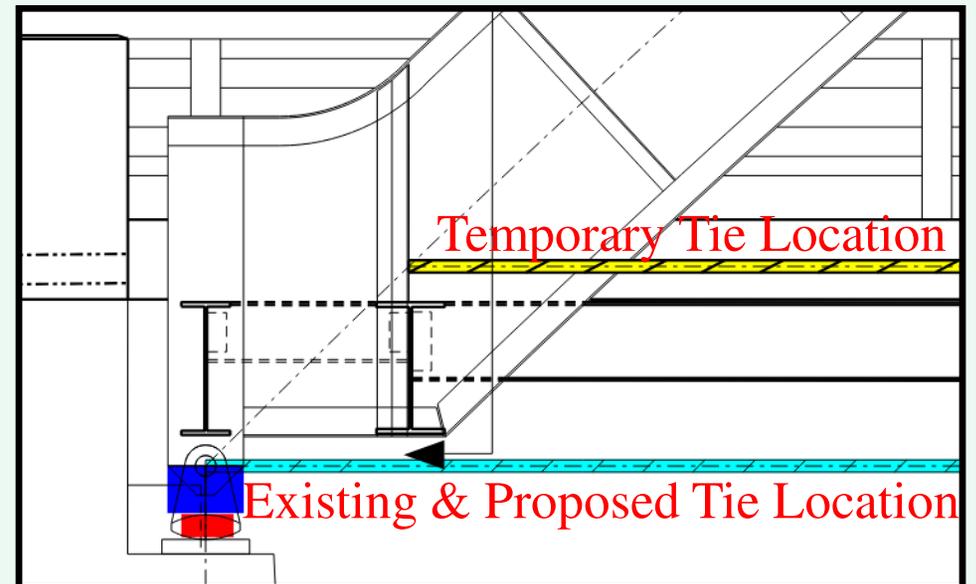
- Load Rating – Adequate for Legal Loads, except pins
- Condition – Satisfactory
- Action: clean & paint, replace pins
- **Significant Features**



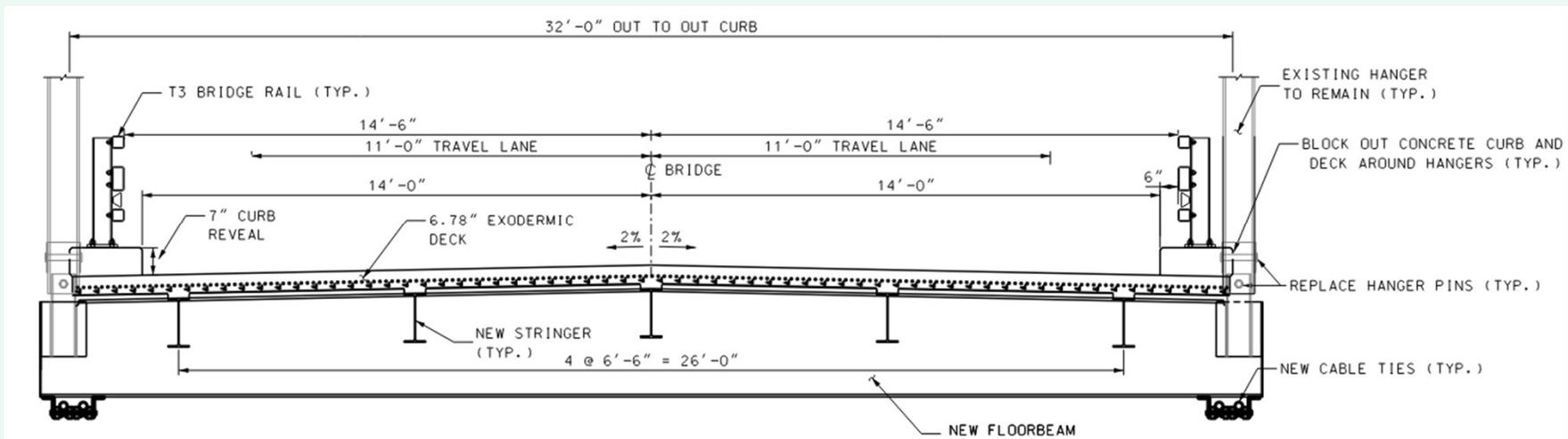
Pin

# Cable Tie

- Load Rating – Inadequate for Legal Loads
- Condition – Fair, Broken Wires
- Recommendation – Replacement
- Requires a temporary cable
- **Significant Feature**



# Proposed Typical Section & Summary of Work



- Replacement of entire deck system, cable ties and hanger pins
- Clean and paint arches and hangers
- Work will require full closure to traffic
- Widen roadway from 24'-0" to 28'-0" between curbs
- Solid deck / riding surface

# Next Steps

- Summer/Fall 2022
  - Finalize Historic Assessment and Effects Table
  - Conduct Public Informational Meeting
  - Complete Environmental Documentation
- Fall 2022 through 2023
  - Environmental Permitting
  - Final Design
- Construction – 2024 (Approx. \$3.0 M)

# Questions?

## NHDOT Contact Information

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